

7 (C) comparing the first and second locations to obtain an
8 indication of an amount of difference between the first and second
9 locations; and

10 X (D) determining whether the indication of the amount of
11 difference exceeds a predetermined amount;

12 wherein steps (A)-(D) are performed by discrete logic circuitry;
13 and

14 wherein the discrete logic circuitry provides an event notification
15 to a microprocessor when the indication of the amount of difference
16 exceeds the predetermined amount.

1 2. A method according to claim 1,

2 wherein the predetermined amount comprises a first
3 predetermined amount in an X-direction and a second predetermined
4 amount in a Y-direction;

5 wherein the determining step (A) comprises determining an
6 X-location and a Y-location of the first touch;

7 wherein the determining step (B) comprises determining an
8 X-location and a Y-location of the second touch;

9 wherein the comparing step (C) comprises determining a first
10 amount of difference between the X-location of the first touch and the
11 X-location of the second touch, and determining a second amount of
12 difference between the Y-location of the first touch and the Y-location of
13 the second touch; and

14 wherein the determining step (D) comprises comparing the first
15 amount of difference with the first predetermined amount and comparing
16 the second amount of difference with the second predetermined amount.

1 3. (Amended) A method of processing an input from a touch plane
2 operator-input device, comprising:

3 X (A) determining a first location of a first touch on the touch
4 plane operator input device, including determining an X-location and a
5 Y-location of the first touch, including

(1) acquiring a first plurality of data samples from the touch plane operator input device,

X (2) calculating the X-location of the first touch by determining an average X-location for the first plurality of data samples, and

(3) calculating the Y-location of the first touch by determining an average Y-location for the first plurality of data samples;

X (B) determining a second location of a second touch on the touch plane operator input device, including determining an X-location and a Y-location of the second touch, including

(1) acquiring a second plurality of data samples from the touch plane operator input device,

(2) calculating the X-location of the second touch by determining an average X-location for the second plurality of data samples, and

(3) calculating the Y-location of the second touch by determining an average Y-location for the second plurality of data samples;

(C) comparing the first and second locations to obtain an indication of an amount of difference between the first and second locations, including

(1) determining a first amount of difference between the X-location of the first touch and the X-location of the second touch, and

(2) determining a second amount of difference between the Y-location of the first touch and the Y-location of the second touch; and

(D) determining whether the indication of the amount of difference exceeds a predetermined amount, the predetermined amount comprising a first predetermined amount in an X-direction and a second predetermined amount in a Y-direction, including comparing the first amount of difference with the first predetermined amount and comparing the second amount of difference with the second predetermined amount;

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40 wherein steps (A)-(D) are performed by discrete logic circuitry;
41 and
42 wherein the discrete logic circuitry provides an event notification
43 to a microprocessor when the indication of the amount of difference
44 exceeds the predetermined amount.

1 4. A method according to claim 1, further comprising displaying a
2 mouse pointer moving from the first location to the second location on a
3 display.

1 5. (Amended) A method of processing an input from a touch plane
2 operator input device, comprising:
3 (A) determining a first location of a first touch on the touch
4 plane operator input device;
5 (B) determining a second location of a second touch on the
6 touch plane operator input device;
7 (C) comparing the first and second locations to obtain an
8 indication of an amount of difference between the first and second
9 locations; and
10 (D) determining whether the indication of the amount of
11 difference exceeds a predetermined amount;
12 wherein steps (A)-(D) are performed by discrete logic circuitry;
13 and
14 wherein the discrete logic circuitry provides an event notification
15 to a microprocessor when the indication of the amount of difference
16 exceeds the predetermined amount,
17 wherein the predetermined amount defines a perimeter of a region
18 that surrounds the first location, and wherein the determining step (D)
19 comprises determining whether the second location is outside the
20 perimeter.

1 6. (Amended) A method according claim 1, wherein steps (A)-(D)
2 are performed under the control of a state machine implemented in the discrete
3 logic circuitry.

1 7. A method of processing operator inputs to a touch plane operator
2 input device to emulate a hardware mouse, comprising:
3 (A) displaying a mouse pointer at a first location on a display;
4 (B) receiving an operator touch indicative of a desired second
5 location for the mouse pointer on the display, the operator touch being
6 received by a touch plane interface from a sensor system of the touch
7 plane operator input device;
8 (C) comparing the first and second locations to obtain an
9 indication of an amount of mouse pointer movement; and
10 (D) determining whether the indication of the amount of mouse
11 pointer movement exceeds a predetermined amount;
12 wherein the steps (B)-(D) are performed by discrete logic circuitry;
13 wherein the discrete logic circuitry provides an event notification
14 to a microprocessor when the indication of the amount of movement
15 exceeds the predetermined amount.

1 8. A method according to claim 7, wherein the touch plane operator
2 input device forms at least part of an operator interface of an internet access
3 device.

1 9. A method according to claim 7, wherein the touch plane operator
2 input device forms at least part of an operator interface of an industrial control
3 system.

1 10. A method according to claim 7, wherein the touch plane interface
2 is located on a system-on-chip integrated circuit chip, wherein the
3 microprocessor is located on the integrated circuit chip.

1 11. A method according to claim 7, wherein the touch plane operator
2 interface and the display in combination comprise a touch screen.

1 12. A method according to claim 7, wherein the touch plane operator
2 interface comprises a touch pad.

1 13. (Amended) An integrated circuit comprising:
2 (A) a microprocessor;

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3 (B) a touch screen interface, the touch screen interface being
4 adapted to interface the microprocessor to a touch screen; and

5 (C) a digital signal processor, the digital signal processor being
6 coupled between the touch screen interface and the microprocessor, the
7 digital signal processor being adapted to determine a location of a touch
8 on the touch screen, the digital signal processor including a comparator,
9 the comparator comparing a new location of a touch to a previous
10 location of a touch, and the digital signal processor issuing an event
11 notification to the microprocessor if an indication of the difference
12 between the previous location and the new location exceeds a
13 predetermined amount.

1 14. (Amended) A device comprising:

2 (A) a touch screen, the touch screen including a touch screen
3 display and a touch screen sensor system; and

4 (B) an integrated circuit, the integrated circuit including

5 (1) a microprocessor;

6 (2) a touch screen interface, the touch screen interface
7 being adapted to interface the microprocessor to the
8 touch screen; and

9 (3) a digital signal processor, the digital signal processor
10 being coupled between the touch screen interface
11 and the microprocessor, the digital signal processor
12 being adapted to determine a location of a touch on
13 the touch screen, the digital signal processor
14 including a comparator, the comparator comparing a
15 new location of a touch to a previous location of a
16 touch, and the digital signal processor issuing an
17 event notification to the microprocessor if an
18 indication of the difference between the previous
19 location and the new location exceeds a
20 predetermined amount.

Please add the following new claims:

1 15. (New) A method according to claim 2, wherein the first *all*
2 predetermined amount defines a perimeter of a region that surrounds the first
3 location, and wherein the perimeter is also defined by the second predetermined
4 amount, and wherein the determining step (D) comprises determining whether
5 the second location is outside the perimeter.

1 16. (New) A method according to claim 15, wherein the first *all*
2 predetermined amount defines the perimeter in a first dimension and the second
3 predetermined amount defines the perimeter in a second dimension.

1 17. (New) A method according to claim 7, wherein the predetermined *all*
2 amount defines a perimeter of a region that surrounds the first location, wherein
3 the determining step (D) comprises determining whether the second location is
4 outside the perimeter, and wherein the event notification is provided responsive
5 to the second location being outside the perimeter.

1 18. (New) An integrated circuit according to claim 13, wherein the
2 predetermined amount defines a perimeter of a region that surrounds the first
3 location, wherein the comparator determines whether the second location is
4 outside the perimeter, and wherein the event notification is issued responsive to
5 the second location being outside the perimeter.

1 19. (New) A device according to claim 14, wherein the predetermined *all*
2 amount defines a perimeter of a region that surrounds the first location, wherein
3 the comparator determines whether the second location is outside the
4 perimeter, and wherein the event notification is issued responsive to the second
5 location being outside the perimeter.

1 20. (New) A method of processing data from a touch plane operator
2 input device, comprising:

3 (A) determining a first location of a first touch on the touch
4 plane operator input device;

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5 (B) determining a second location of a second touch on the
6 touch plane operator input device;

7 (C) determining that the second location is outside a perimeter
8 of a region, the first location being inside the perimeter of the region; and

9 (D) issuing an event notification to the microprocessor in
10 response to determining that the second location is outside the perimeter
11 of the region;

12 wherein steps (A)-(D) are performed by digital signal processor
13 separate from the microprocessor.

1 21. (New) A method of processing data from an operator input
2 device, comprising:

3 (A) acquiring data from the operator input device relating to a
4 desired first location of the mouse pointer on the display;

5 (B) displaying a mouse pointer at a first location on a display;

6 (C) acquiring additional data from the operator input device;

7 (D) causing a microprocessor to wait to process location data
8 from the operator input device until after the additional data is acquired,
9 such that the microprocessor does not process the additional data;

10 (E) after acquiring the additional data, acquiring further
11 additional data from the input device indicative of a second desired
12 position of the mouse pointer on the display, the second desired position
13 having a second location that is outside a perimeter of a region, the first
14 location of the first operator touch being inside the perimeter;

15 (F) providing the microprocessor with information relating to
16 the second location of the second touch;

17 (G) processing the information relating to the second location
18 of the second touch at the microprocessor;

19 (H) displaying the mouse pointer at the second location on the
20 display;

21 wherein the causing step (D) causes microprocessor overhead
22 required to process data from the operator input device to be reduced as
23 compared to the microprocessor overhead that would be required if the
24 microprocessor processed the additional data.

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1 22. (New) A method of processing data from a touch plane operator
2 input device, comprising:

3 (A) acquiring data from the touch plane operator input device
4 relating to a first touch on the touch screen;

5 (B) determining a first location of the first touch on the touch
6 plane operator input device;

7 (C) acquiring additional data from the touch plane operator
8 input device;

9 (D) causing a microprocessor to wait to process location data
10 from the touch plane operator input device until after the additional data
11 is acquired, such that the microprocessor does not process the additional
12 data;

13 (E) after acquiring the additional data, acquiring further
14 additional data from the touch plane operator input device relating to a
15 second touch on the touch screen, the second operator touch having a
16 second location that is outside a perimeter of a region, the first location
17 of the first operator touch being inside the perimeter;

18 (F) determining a second location of the second touch on the
19 touch plane operator input device; and

20 (G) providing the microprocessor with information relating to
21 the second location of the second touch;

22 (H) processing the information relating to the second location
23 of the second touch at the microprocessor;

24 wherein the causing step (D) causes microprocessor overhead
25 required to process data from the touch plane operator input device to be
26 reduced as compared to the microprocessor overhead that would be
27 required if the microprocessor processed the additional data.

1 23. (New) A method according to claim 21, wherein the first and
2 second operator touches are both part of a continuous series of touches that
3 occur as part of an operator touch trajectory that extends from a first region of
4 the touch plane operator input device to a second region of the touch plane
5 operator input device.